

REMARKS

IDS Not Considered

The applicant submitted an IDS on 5/31/02 (a copy of form PTO-1449 and a copy of the post card evincing receipt by the USPTO is enclosed). The applicant respectfully requests the examiner to consider the IDS and provide a copy of the initialed form PTO-1449 in the next office action.

Claim Rejections - 35 USC §102

The examiner rejected claims 1-3 under 35 USC §102(b) as anticipated by Helms et al. (U.S. Patent No. 3,700,855). The examiner asserts that Helms discloses a disk drive with improved shrouding (figures 1-5) comprising a disk, a motor for rotating the disk, a head, an actuator arm for actuating the head radially over the disk, a base, and a cover attached to the base to form a head disk assembly chamber, the cover comprising an inner surface and an outer surface and a shroud extending radially from the inner surface into the head disk assembly chamber substantially enveloping the periphery of the disk, including at least part of the periphery coextensive with the actuator arm, to provide radial shrouding of the disk. The applicant respectfully disagrees.

Helms discloses a disk drive having a linear positioner (col. 2, lines 63-65). As described at col. 3, lines 34-36, "the shroud comprises a substantially enclosed cylinder open only in the area 26 for enabling the head positioning arms to project into the disk compartment 21". Thus Helms discloses a disk drive having a linear actuator for moving the actuator arm in a linear path between the inner and outer diameter of the disk. Because the path of the actuator arm is linear, the actuator arm is oriented perpendicular to the disk and therefore never coextensive with the periphery of the disk.

In FIG. 2 of applicant's specification, a disk drive according to an embodiment of the present invention is shown having a rotary actuator for rotating the actuator arm 126 about a pivot in order to position the head 124 radially over the disk 122. When the

actuator arm 126 is rotated in the clockwise direction so that the head 124 is positioned at the outer diameter of the disk 122, the actuator arm 126 is coextensive with the periphery of the disk 122. Since Helms does not disclose a disk drive wherein the actuator arm is coextensive with the periphery of the disk, the rejection should be withdrawn.

The applicant has also amended the claims to recite a “rotary actuator for rotating the actuator arm about a pivot to actuate the head radially over the disk”. Since Helms discloses a linear actuator, the rejection should be withdrawn.

The examiner rejected claims 1 and 4 under 35 USC §102(b) as anticipated by Hendriks (U.S. Patent No. 6,091,570).

Regarding claim 1, the examiner asserts that Hendriks discloses a disk drive (figures 4-5) comprising a disk, a motor for rotating the disk, a head, an actuator arm for actuating the head radially over the disk, a base, and a cover attached to the base to form a head disk assembly chamber, the cover comprising an inner surface and an outer surface and a shroud extending radially from the inner surface into the head disk assembly chamber substantially enveloping the periphery of the disk, including at least part of the periphery coextensive with the actuator arm, to provide radial shrouding of the disk. The applicant respectfully disagrees.

Although Hendriks discloses a disk drive having a rotary actuator such that the actuator arm is coextensive with the periphery of the disk when the head is positioned at the outer diameter of the disk, the shroud disclosed by Hendriks (FIG. 5) does not envelop any part where the actuator arm is coextensive with the periphery of the disk. The shroud disclosed in FIG. 5 of Hendriks is U-shaped and does not extend around the periphery of the disk toward the actuator arm (within skimmer structure 64).

Referring to FIG. 1 of applicant’s specification, shown is a prior art head disk assembly chamber 128 comprising a gap 118 at the periphery of the disk 108 coextensive with the actuator arms 110 so that the head stack assembly (HSA) can be inserted during

manufacturing (page 2, lines 17-18). The air turbulence which forms in this gap 118 exacerbates disk flutter, windage drag, and acoustic noise (page 2, lines 21-22). FIG. 2 shows a disk drive according to an embodiment of the present invention comprising a gap 138 similar to the prior art disk drive of FIG. 1, and FIG. 3A shows a cover comprising a radial shroud 136 which extends around the periphery of the disk 122 and into the gap 138 to provide radial shrouding around at least part of the periphery of the disk 122 coextensive with the actuator arm 126 (page 4, lines 17-24).

Referring to FIG. 3 of Hendriks, the actuator arm 32 is shielded by a skimmer structure 32 from the high speed air flow represented by arrows 36 (col. 4, lines 19-14). However, the skimmer structure 32 is not part of the radial shroud integrated into the cover 60 as shown in FIG. 5. The skimmer structure 32 (element 64 in FIG. 5) is a separate component integrated into the base 65 as shown in FIG. 5. Therefore the radial shroud integrated into the cover 60 does not extend around the periphery of the disk 47 coextensive with the actuator arm 32 as recited in the claims. The rejection should therefore be withdrawn.

Regarding claim 4, the examiner asserts that Hendricks discloses in FIG. 5 a cover comprising a substantially C-shaped depression positioned substantially concentric over the disk to provide axial shrouding. The applicant respectfully disagrees.

The cover disclosed by Hendricks in FIG. 5 comprises a flat surface concentric over the disk and therefore does not provide axial shrouding. In contrast, in FIG. 3B and FIG. 4 of applicant's specification a cover is disclosed comprising a C-shaped depression 140 positioned substantially concentric over the disk which provides axial shrouding. Since Hendricks does not disclose or suggest this modification, the rejection should be withdrawn.

CONCLUSION

The above amendments to the claims do not add new matter or raise new issues; the applicant respectfully requests the amendments be entered. In view of the above amendments and remarks, the rejections under 35 USC §102 should be withdrawn. Neither Helms or Hendriks disclose or suggest a cover having a shroud which substantially envelopes the periphery of the disk, including at least part of the periphery coextensive with the actuator arm when the actuator arm is positioned adjacent to the outer periphery of the disk, to provide radial shrouding of the disk. In addition, Hendricks does not disclose or suggest a cover comprising a C-shaped depression positioned substantially concentric over the disk to provide axial shrouding. The examiner is encouraged to contact the undersigned over the telephone in order to resolve any remaining issues that may prevent the immediate allowance of the present application.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: The HON. ASSISTANT Commissioner of Patents, U.S. PATENTS & TRADEMARK OFFICE, P.O. BOX 2327, ARLINGTON, VA 22202, on:

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